



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/730,006	12/09/2003	Yasuyuki Kamijo	46159	2736
1609	7590	04/05/2006	EXAMINER	
ROYLANCE, ABRAMS, BERDO & GOODMAN, L.L.P.			KINNEY, ANNA L	
1300 19TH STREET, N.W.				
SUITE 600			ART UNIT	
WASHINGTON,, DC 20036			PAPER NUMBER	
			1731	

DATE MAILED: 04/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Cn

Office Action Summary	Application No.	Applicant(s)	
	10/730,006	KAMIJO ET AL.	
	Examiner	Art Unit	
	Anna Kinney	1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 12-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 12-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1-10 and 12-14 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prusas (U.S. Patent 4,486,267).

With respect to claim 1, Prusas discloses a process for preparing bleached mechanical pulp having high brightness from wood chips (col. 3, lines 47-52; col. 7, lines 11-13) comprising the steps of impregnating wood chips with a chemical liquor (col. 4, lines 63-68) comprising a chelating agent (col. 5, lines 30-61) at a pH range of greater than 7.5 (col. 3, lines 53-56), which contains one specific point within the claimed range of 7-12, and then removing the impregnating chemical liquor from the chips (col. 6, lines 8-11), followed by a sequential step of defibration by primary refining, beating by secondary refining (col. 7, lines 1-11), and bleaching (col. 7, lines 11-13), wherein the step of impregnating comprises compressing the chips, immersing the chips under compression in the chemical liquor and releasing pressure to impregnate them with the chemical liquor (col. 5, lines 14-19), and wherein the step of removing the

Art Unit: 1731

impregnating chemical liquor comprises compressing the chips impregnated with the chemical liquor to drain the impregnating chemical liquor from the chips (col. 6, lines 8-11).

Prusas does not disclose expressly that the wood chips have low bleachability. However, Prusas does disclose that the composition of the liquor depends on the degree of bleaching that is desired and the type and age of the wood chips used (col. 5, lines 30-44), and that the process can be used on both hardwoods and softwoods (col. 4, lines 52-55), thus clearly suggesting its applicability to chips having low bleachability and/or high bleachability.

Therefore, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to utilize the process of Prusas on low bleachability wood chips since Prusas clearly suggests its process is applicable to all chips with the reasonable expectation of producing high brightness wood chips.

With respect to claim 2, Prusas discloses that the impregnating chemical liquor is an aqueous solution of an alkaline inorganic compound and a chelating agent (col. 5, lines 20-56).

Claims 3 and 4 rejected under 35 U.S.C. 103(a) as being unpatentable over Prusas as applied to claims 1 and 2 above, and further in view of Sabourin (U.S. Publication 2001/005051 A1).

With respect to claims 3 and 4, Prusas does not disclose expressly a compression ratio.

Sabourin discloses that the chemical impregnation step comprises compressing the chips (page 4, col. 1, lines 1 to 5) at a compression ratio of 4:1 or greater (page 1, col. 2, ¶ 0007, line 1 to 8), which contains one specific endpoint from the claimed range of 4:1-16:1, and releasing pressure to impregnate them with the chemical liquor (page 4, col. 1, lines 6 to 9) and the step of removing the impregnating chemical liquor comprises compressing the chips impregnated with the chemical liquor (page 4, col. 1, lines 9 to 11) at a compression ratio of 4:1 to 8:1 (page 2, col. 1, lines 5 to 7, and ¶ 0011, lines 1 to 2 and 27 to 29), which contains two specific points within the claimed range of 4:1-16:1, to drain the impregnating chemical liquor.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the compression ratios of Sabourin before and after the impregnation step of Prusas to obtain the invention as specified in claims 3 and 4. The motivation for doing so would have been to destructure lignocellulose materials, thereby fostering improved quality pulp and more economical pulp processing conditions (page 1, col. 1, ¶ 0005, lines 1 to 5).

Claims 8-10 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pete (U.S. Patent 2,687,943) in view of Prusas.

With respect to claim 8, Pete discloses a process for preparing bleached mechanical pulp having high brightness (col. 1, lines 4-6) comprising the steps of defibrating wood (col. 1, lines 1-3), pretreating the wood with a non-oxidizing calcium salt (col. 1, lines 26-30), washing pulp fibers formed by defibration and pretreatment (col. 5, lines 9-13 and col. 1, lines 37-51) such that defibrated pulp is diluted with water

Art Unit: 1731

(col. 1, lines 37-42) at a temperature of 77-86°F (col. 2, lines 8-13), which contains specific points within the claimed range of 5-95°C, to a concentration (consistency – col. 2, lines 10-11) of 5%, which contains one specific endpoint within the claimed range of 0.5-5.0%, and is dehydrated by a press on a filter (col. 1, lines 45-51), and bleaching the pulp fibers (col. 1, lines 45-51), to give bleached chemical pulp having a Hunter brightness of 50.6-73.2, which contains one specific point within the claimed range of 45-65%, and further discloses 10 additional specific points (54.6, 54.9, 59.2, 56.1, 60.9, 60.6, 63.2, 62.1, 55.5, and 60.4) within the claimed range of 45-65%.

Pete does not disclose expressly the washing efficiency achieved, that the first defibration step is by primary refining, or that there is a secondary refining step. However, at the time of the invention, absent a showing of unexpected results, it would have been obvious to a person of ordinary skill in the art to optimize the washing efficiency to achieve the desired removal of mineral ions from the pulp (col. 5, lines 4-13). Furthermore, the wide range claimed indicates a lack of criticality. It has been held that discovering the optimum or workable ranges or an optimum value of a result effective variable involves only routine skill in the art. See MPEP 2144.05 II.

Prusas discloses defibrating wood chips by primary refining (col. 7, lines 1-2), and further beating them by secondary refining (col. 7, lines 1-11).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use refining steps as described by Prusas in the pulping and bleaching process of Pete to obtain the invention as specified in claim 8.

The motivation would have been that yields of pulp based on wood chips which exceed 80% and are generally on the order of 85 to 90% or better are available (col. 7, lines 14-16).

With respect to claim 9, Pete discloses that the wood chips can be pine (Pinus), hemlock (Tsuga), and fir (Pseudotsuga) (col. 1, lines 12-15).

With respect to claim 10, Pete and Prusas are applied as in the rejection to claim 8, above.

With respect to claims 12-14, Pete discloses single-stage bleaching with an oxidizing agent (col. 1, lines 45-51).

Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prusas as applied to claims 1 and 2, above, in view of Pete.

Prusas does not disclose expressly that the wood chips are single chips or mixed chips of two or more of wood species having low bleachability selected from Larix, Pseudotsuga, Cryptomeria, Tsuga, Thuja and Pinus.

Pete discloses that the wood chips can be pine (Pinus), hemlock (Tsuga), and fir (Pseudotsuga) (col. 1, lines 12-15).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the defibrating and bleaching process of Prusas and Danielsson et al using the wood species described by Pete to obtain the invention as specified in claims 5 and 6. The motivation for doing so would have been to achieve a simple, inexpensive treatment of the pulp (col. 1, lines 18-25).

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Prusas and Sabourin as applied to claim 3 above, and further in view of Pete.

Pete is applied as in the rejection to claims 5 and 6, above.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

The Examiner is including in the current Form 892 prior art made of record in the previous action and not relied upon. Further prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent 4,599,138 discloses mechanical pulping with an impregnation step and two refining steps, in which the impregnation liquor comprises an alkaline aqueous solution and a complexing agent, and describes compressing the pulp to drain the liquor. U.S. Patent 4,900,399

Art Unit: 1731

discloses manufacture of bleached mechanical pulp including an impregnation stage that includes complex builders, and a subsequent beating process.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anna Kinney whose telephone number is (571) 272-8388. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ALK


STEVEN P. GRIFFIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700